

IN THE DISTRICT COURT OF THE UNITED STATES

for the Western District of New York

**April 2021 GRAND JURY
(Impaneled April 14, 2021)**

THE UNITED STATES OF AMERICA

INDICTMENT

-vs-

JI WANG

Violations:

Title 18, United States Code,
Sections 1831, 1832 & 2;
Title 50, United States Code,
Section 1705; Title 15, Code of
Federal Regulations, Section 764.2

(10 Counts)

INTRODUCTORY ALLEGATIONS

The Grand Jury Alleges That:

At all times relevant to this Indictment:

A. Defense Advanced Research Projects Agency ("DARPA")

1. DARPA was, and is, an agency of the United States Department of Defense. Its mission is to make pivotal investments in breakthrough technologies for national security. To do so, DARPA collaborates with various academic, corporate, and governmental partners. The fruits of DARPA's mission include transformative technologies with military and civilian applications (for example, stealth technology and the Internet).

2. DARPA has collaborated with Corning Incorporated ("Corning"), a company based in the Western District of New York, to develop high-powered laser fibers for military application.

B. Defendant JI WANG

3. The defendant, JI WANG (“WANG”), worked at Corning in the Western District of New York from 1998 to 2019. His work included optical fiber research, a portion of which was funded by DARPA.

C. The DARPA Laser Fiber Project

4. In or about 2003, DARPA and Corning entered into a Technology Investment Agreement, the main purpose of which was advanced research and technology development of high-powered optical laser fibers. The objective of the DARPA project was to develop and produce laser fibers that could be weaponized and used to combat threats posed by drones. Pursuant to the Technology Investment Agreement, as amended from time to time, almost \$16 million was invested in the DARPA project.

5. WANG was assigned to work on the DARPA project, and was a lead scientist on the project.

6. The DARPA project achieved an almost 1000-fold increase in the power of the subject fiber lasers and overcame associated technical challenges. The research and development effort consisted of an iterative, trial-and-error process whereby hundreds of different fiber laser recipes were devised, developed, produced and tested. Detailed measurements and data were collected for each fiber laser recipe produced and tested.

D. Trade Secret and Export-Controlled Data

7. The DARPA project led to a substantial body of valuable business, scientific, engineering, and technical information relating to the development, production, and manufacture of high-power specialty optical fibers (collectively, the “DARPA Laser Fiber Manufacturing Technology”). The DARPA Laser Fiber Manufacturing Technology

consisted of the unpublished methods, techniques, processes, and procedures, successful and unsuccessful, used to develop and manufacture optical fibers, and included detailed information related to equipment, settings, process details, specific conditions, materials, parameters and techniques for glass soot deposition, glass consolidation, and vapor phase doping, as well as contemporaneous sensor measurements taken during the manufacturing processes, and test results and performance characteristics of specific optical fiber “recipes” and compositions to achieve fiber refractive index profiles and designs that were conceived, developed and produced in the DARPA project.

8. The DARPA Laser Fiber Manufacturing Technology was proprietary to and owned by Corning and was documented in a series of non-public electronic files held by Corning. DARPA retained certain rights to results of the DARPA project. The DARPA Laser Fiber Manufacturing Technology had substantial value to someone seeking to manufacture laser fibers. It was not generally known or readily ascertainable through proper means. A person with knowledge of this data obtained economic value from its use.

9. The DARPA Laser Fiber Manufacturing Technology related to a product used in and intended for use in interstate and foreign commerce, that is, laser fibers.

10. Corning took reasonable measures to protect its intellectual property, including the DARPA Laser Fiber Manufacturing Technology, from unauthorized disclosure and use through various measures and techniques. Those measures and techniques included, among others:
















- a. Restricting and controlling physical access to its facilities;
- b. Requiring employees, including WANG, to execute agreements prohibiting the disclosure and use of proprietary information, except in the course of their official work duties;

- c. Training employees, including WANG, on the protection and confidentiality of sensitive/proprietary/trade secret information, as well as export-controlled technology;
- d. Securing its information technology systems and networks through encryption, password protection, dual authentication procedures, data loss prevention software, and routine network monitoring; and
- e. Using classification markings on documents containing sensitive information.

11. All research and development work on the DARPA project was confidential and proprietary, and no information developed in the DARPA project could be disclosed without first following specific procedures. Access to the network locations used to store DARPA project files and data was restricted to members of the DARPA project team, and no one else.

12. The technology developed during the DARPA project was also subject to export controls under the International Emergency Economic Powers Act and Export Administration Regulations. WANG understood that export of the DARPA project technology was restricted based on export controls and had received training regarding export control requirements. At no time did WANG obtain, or apply to obtain, a license from the United States government to export such technology to the People's Republic of China.

13. The DARPA Laser Fiber Manufacturing Technology was stored in the electronic files set forth below ("the DARPA Laser Fiber Manufacturing Technology Files"), and elsewhere, and constituted a trade secret within the meaning of Title 18, United States Code, Section 1839:

 121-2515 Er-Al cane epma.xls
 121-2550 epma.xls
 AL allcore AlCl3Temp.xls
 AlCl3 vessel temp compareYb via Er.xls
 Ar via He as carrier gas.xls
 b-f vessel_dope1.xls
 boron_core_deepdope2.xls
 boron_core_vesseldope2.xls
 DARPA laydown flo_Yb_Al_Ge_5@L12.xls
 darpa_yb_al_1@L12.xls
 Er-Al Soot results summary.ppt
 R-100724.doc
 R-100724_OVD darpa process development.doc
 TRACKING 2004.xls
 TRACKING 2005.xls

E. WANG Surreptitiously Seeks to Establish a Laser Fiber Business in the People's Republic of China

14. Beginning in or about late 2014 and continuing through in or about late 2017, the exact date being unknown, WANG and another person ("Person 1"), known to the Grand Jury, surreptitiously sought to establish a laser fiber business, which they referred to as QuantumWave (or sometimes, WaveQuantum), in the People's Republic of China.

15. WANG and Person 1 contacted and negotiated with the People's Republic of China and its instrumentalities and agents, including but not limited to representatives from (a) the Chinese Academy of Sciences, Academy of Opto-Electronics, and (b) the government of Tianjin City, Dongli District, regarding the establishment of a high-tech research and development company for laser fiber and other specialty optical fiber products.

16. WANG and Person 1 promised to provide laser fiber capability by establishing a world-class base in China for specialty optical fiber production and research. In addition, WANG and Person 1 also expressed interest in establishing an associated laboratory within

the Dongli District for advanced research in the field of specialty optical fiber pursuant to the Recruitment Program of Global Experts, also known as the Thousand Talents Program.

17. WANG and Person 1 represented to their Chinese counterparts that the technology they proposed to bring to China was “strictly controlled” by the United States.

18. WANG and Person 1 sought approximately \$29 million dollars in funding for QuantumWave from their Chinese counterparts and, in return, proposed to contribute their knowledge, expertise and intellectual property to the joint venture, which they estimated to be worth approximately \$10 million at a minimum.

19. Between December 2014 and August 2018, on several occasions, WANG traveled from the United States to the People’s Republic of China and met with his Chinese counterparts to negotiate. On at least two trips, in July-August 2017 and October-November 2017, WANG brought with him a laptop that contained technology pertaining to the DARPA project that was controlled for export to China for national security reasons under Export Control Classification Number (“ECCN”) 6E001.

20. Despite lengthy negotiations over a period of years, WANG and Person 1 did not reach a final agreement with their Chinese counterparts. By late 2017, WANG and Person 1 discontinued their efforts to establish a business and laboratory in China.

F. WANG Seeks to Establish a Laser Fiber Business in the United States

21. Starting in January 2018 and continuing to November 2018, after negotiations with the Chinese ended in an impasse, WANG and Person 1 held discussions with a United States person, known to the Grand Jury, to provide venture capital funding for their proposed QuantumWave business.

22. Representing that they had devised a new specialty laser fiber that was superior to any other available at the time, WANG and Person 1 sought approximately \$15 million in funding to launch QuantumWave. They touted their extensive expertise and experience as their contribution to the project.

23. The specific laser fiber that QuantumWave proposed to manufacture was the same as a laser fiber developed and tested as part of the DARPA project. WANG planned to use a specific production technique, known as vapor phase doping, to produce laser fibers at QuantumWave. Vapor phase doping was a technically difficult process used in the DARPA project that resulted in superior performance characteristics for laser fibers.

G. WANG Downloads DARPA Project Files

24. On or about July 1, 2016, without authorization, WANG downloaded a copy of a folder containing DARPA project files, including the DARPA Laser Fiber Manufacturing Technology Files, from Corning's network to a personal USB drive.

25. WANG downloaded these files to use as reference for his QuantumWave business, and to serve as a starting point from which to extrapolate in developing laser fibers for his QuantumWave business.

26. At the time, WANG had no need related to the DARPA project or his employment at Corning to access the DARPA project folder, and no business reason to copy the DARPA Laser Fiber Manufacturing Technology Files onto a removable personal digital storage device.

27. WANG retained possession of the DARPA Laser Fiber Manufacturing Technology until at least 2018, and the personal digital storage device containing the DARPA

Laser Fiber Manufacturing Technology Files has not been located or recovered by the government or by Corning.

COUNT 1
(Economic Espionage – Copying – 18 U.S.C. §1831(a)(2))

The Grand Jury Charges That:

28. The Introductory Allegations contained in paragraphs 1 through 27, above, are repeated and incorporated by reference.

29. On or about July 1, 2016, in the Western District of New York, and elsewhere, the defendant, JI WANG, intending and knowing that the offense would benefit a foreign government, foreign instrumentality and foreign agent, that is, the People's Republic of China, and instrumentalities thereof, including the Tianjin City, Dongli District, Chinese Academy of Sciences, Academy of Opto-Electronics, and Thousand Talents Program, did knowingly and without authorization copy, duplicate and download the DARPA Laser Fiber Manufacturing Technology Files, which contained a trade secret, that is, DARPA Laser Fiber Manufacturing Technology.

All in violation of Title 18, United States Code, Section 1831(a)(2).

COUNT 2
(Theft of Trade Secrets – Copying – 18 U.S.C. §1832(a)(2))

The Grand Jury Further Charges That:

30. The Introductory Allegations contained in paragraphs 1 through 27, above, are repeated and incorporated by reference.

31. On or about July 1, 2016, in the Western District of New York, and elsewhere, the defendant, JI WANG, with the intent to convert a trade secret, namely, DARPA Laser Fiber Manufacturing Technology, that was related to a product and service used in and intended for use in interstate and foreign commerce, to the economic benefit of someone other than the owner thereof, namely, WANG, Person 1, the business known as QuantumWave, the Tianjin City, Dongli District, Chinese Academy of Sciences, Academy of Opto-Electronics, and Thousand Talents Program, and intending and knowing that the offense would injure the owner of that trade secret, did knowingly and without authorization copy, duplicate and download the DARPA Laser Fiber Manufacturing Technology Files, which contained a trade secret, that is, DARPA Laser Fiber Manufacturing Technology.

All in violation of Title 18, United States Code, Section 1832(a)(2).

COUNT 3
(Economic Espionage – Possessing – 18 U.S.C. §1831(a)(3))

The Grand Jury Further Charges That:

32. The Introductory Allegations contained in paragraphs 1 through 27, above, are repeated and incorporated by reference.

33. Beginning on or about July 1, 2016, and continuing to at least 2018, in the Western District of New York, and elsewhere, the defendant, JI WANG, intending and knowing that the offense would benefit a foreign government, foreign instrumentality and foreign agent, that is, the People's Republic of China, and instrumentalities thereof, including the Tianjin City, Dongli District, Chinese Academy of Sciences, Academy of Opto-Electronics, and Thousand Talents Program, did knowingly possess a trade secret, that is

DARPA Laser Fiber Manufacturing Technology, including the DARPA Laser Fiber Manufacturing Technology Files, knowing the same to have been stolen, appropriated, obtained and converted without authorization.

All in violation of Title 18, United States Code, Section 1831(a)(3).

COUNT 4
(Theft of Trade Secrets – Possessing – 18 U.S.C. §1832(a)(3))

The Grand Jury Further Charges That:

34. The Introductory Allegations contained in paragraphs 1 through 27, above, are repeated and incorporated by reference.

35. Beginning on or about July 1, 2016, and continuing to at least 2018, in the Western District of New York, and elsewhere, the defendant, JI WANG, with the intent to convert a trade secret, namely, trade secret information relating to DARPA Laser Fiber Manufacturing Technology, that was related to a product and service used in and intended for use in interstate and foreign commerce, to the economic benefit of someone other than the owner thereof, namely, WANG, Person 1, the business known as QuantumWave, the Tianjin City, Dongli District, Chinese Academy of Sciences, Academy of Opto-Electronics, and Thousand Talents Program, and intending and knowing that the offense would injure the owner of that trade secret, did knowingly possess a trade secret, that is DARPA Laser Fiber Manufacturing Technology, including the DARPA Laser Fiber Manufacturing Technology Files, knowing the same to have been stolen, appropriated, obtained and converted without authorization.

All in violation of Title 18, United States Code, Section 1832(a)(3).

COUNT 5
(Economic Espionage – Attempt – 18 U.S.C. §1831(a)(4))

The Grand Jury Further Charges That:

36. The Introductory Allegations contained in paragraphs 1 through 27, above, are repeated and incorporated by reference.

37. Beginning in or about late 2014 and continuing to in or about late 2017, the exact dates being unknown, in the Western District of New York, and elsewhere, the defendant, JI WANG, intending and knowing that the offense would benefit a foreign government, foreign instrumentality and foreign agent, that is, the People's Republic of China, and instrumentalities thereof, including the Tianjin City, Dongli District, Chinese Academy of Sciences, Academy of Opto-Electronics, and Thousand Talents Program, did attempt to violate Title 18, United States Code, Sections 1831(a)(1) & (a)(2), by attempting knowingly and without authorization to steal, appropriate and convey, a trade secret, namely, DARPA Laser Fiber Manufacturing Technology.

All in violation of Title 18, United States Code, Section 1831(a)(4).

COUNT 6
(Theft of Trade Secrets – China Attempt – 18 U.S.C. §1832(a)(4))

The Grand Jury Further Charges That:

38. The Introductory Allegations contained in paragraphs 1 through 27, above, are repeated and incorporated by reference.

39. Beginning in or about late 2014 and continuing to in or about late 2017, the exact dates being unknown, in the Western District of New York, and elsewhere, the defendant, JI WANG, with the intent to convert a trade secret related to a product used in

and intended for use in interstate and foreign commerce to the economic benefit of someone other than the owner thereof, namely, WANG, Person 1, the business known as QuantumWave, the Tianjin City, Dongli District, Chinese Academy of Sciences, Academy of Opto-Electronics, and Thousand Talents Program, and intending and knowing that the offense would injure the owner of that trade secret, did attempt to violate Title 18, United States Code, Sections 1832(a)(1) & (a)(2), by attempting knowingly and without authorization to steal, appropriate and convey, a trade secret, that is, DARPA Laser Fiber Manufacturing Technology.

All in violation of Title 18, United States Code, Section 1832(a)(4).

COUNT 7

(Theft of Trade Secrets – Venture Capital Attempt – 18 U.S.C. §1832(a)(4))

The Grand Jury Further Charges That:

40. The Introductory Allegations contained in paragraphs 1 through 27, above, are repeated and incorporated by reference.

41. Beginning in or about January 2018 and continuing to in or about November 2018, the exact dates being unknown, in the Western District of New York, and elsewhere, the defendant, JI WANG, with the intent to convert a trade secret that related to a product and service used in and intended for use in interstate and foreign commerce to the economic benefit of someone other than the owner thereof, namely, WANG, Person 1, the business known as QuantumWave, and a United States person, known to the Grand Jury, and intending and knowing that the offense would injure the owner of that trade secret, did attempt to violate Title 18, United States Code, Sections 1832(a)(1) & (a)(2), by attempting

knowingly and without authorization to steal, appropriate and convey, a trade secret, that is, DARPA Laser Fiber Manufacturing Technology.

All in violation of Title 18, United States Code, Section 1832(a)(4).

COUNTS 8 AND 9
(International Emergency Economic Powers Act)

The Grand Jury Further Charges That:

42. The Introductory Allegations contained in paragraphs 1 through 27, above, are repeated and incorporated by reference.

43. On or about the dates set forth below, in the Western District of New York, and elsewhere, the defendant, JI WANG, did willfully and knowingly export, and cause to be exported, directly and indirectly, from the United States of America to the People's Republic of China, technology, to wit, High Power, all-glass, double-clad fiber process development technical presentation, without having first obtained a license for such export from the United States Department of Commerce.

COUNT	DATES
8	July 2017 to August 2017
9	October 2017 to November 2017

All in violation of Title 18, United States Code, Section 2; Title 50, United States Code, Section 1705; and Title 15, Code of Federal Regulations, Section 764.2(a)-(b).

COUNT 10
(International Emergency Economic Powers Act – Attempt)

The Grand Jury Further Charges That:

44. The Introductory Allegations contained in paragraphs 1 through 27, above, are repeated and incorporated by reference.

45. Starting in or about late 2014 and continuing to in or about late 2017, the exact dates being unknown, in the Western District of New York, and elsewhere, the defendant, JI WANG, did willfully and knowingly attempt to export, directly and indirectly, from the United States of America to the People's Republic of China, technology, to wit, High Power, all-glass, double-clad fiber process development technical presentation, without having first obtained a license for such export from the United States Department of Commerce.

All in violation of Title 18, United States Code, Section 2; Title 50, United States Code, Section 1705; and Title 15, Code of Federal Regulations, Section 764.2(c).

DATED: Rochester, New York, June 24, 2021.

JAMES P. KENNEDY, JR.
United States Attorney

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A TRUE BILL:

s/Foreperson
FOREPERSON